

REMARKS

This amendment is in response to the Final Office Action of March 2, 2010. Claims 1, 2, 5-8, and 25 have been amended. Claims 18, 26, 33, 47, and 48 have been cancelled. Claims 49-53 have been added. Claims 1-17, 20, 22, 24, 25, 27, 28, 31, 32, 34-36, 38, 45, 46, 49-53 are currently pending. No new matter has been added.

§ 102 and § 103 Rejections

Claims 1-4, 9-12, 16-18, 20, 26, and 47 were rejected under 35 U.S.C. 102(b) as being anticipated by U.S. Patent No. 5,792,055 to McKinnon ("McKinnon"). Claims 25, 33, 38, and 48 were rejected under 35 U.S.C. 103(a) as being unpatentable over McKinnon. Claims 5-8 were rejected under 35 U.S.C. 103(a) as being unpatentable over McKinnon as applied to claim 1, further in view of U.S. Patent No. 5,868,674 to Glowinski et al. ("Glowinski"). Claims 13-15 were rejected under 35 U.S.C. 103(a) as being unpatentable over McKinnon as applied to claim 1, further in view of U.S. Patent No. 6,675,033 to Lardo et al. ("Lardo"). Claims 22, 24, 27-28, 31, 34-36, and 45-46 were rejected under 35 U.S.C. 103(a) as being unpatentable over McKinnon in view of Lardo. Claim 32 was rejected under 35 U.S.C. 103(a) as being unpatentable over McKinnon in view of Lardo as applied to claim 45, further in view of U.S. Patent No. 7,273,483 to Wiener et al. ("Wiener"). Applicants traverse these rejections.

Claim 1 recites a magnetic resonance imaging (MRI) guidewire that includes a guidewire. The guidewire has a distal end sized and shaped for insertion into a subject and a proximal end sized and shaped for insertion into a connector coupled to an MRI scanner. The guidewire includes an inner conductor extending at least a major length of the guidewire and an outer conductor coaxially disposed about the inner conductor such that the outer conductor has a larger diameter than a diameter of the inner conductor. The outer conductor extends at least the major length of the guidewire. The proximal end of the guidewire includes an outer conductor contact coupled electrically to the outer conductor, the outer conductor contact having a diameter. An extended section of the inner conductor extends proximally beyond the outer conductor contact. The

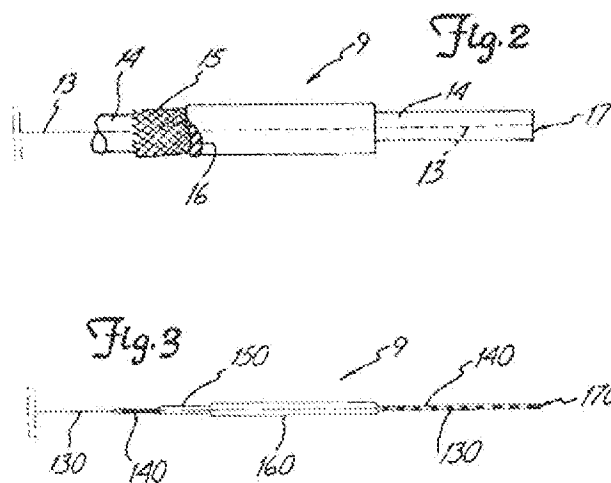
extended section of the inner conductor includes electrically conductive material disposed at least partially around a portion of the extended section of the inner conductor. An inner conductor contact is radially disposed over the electrically conductive material such that the inner conductor contact has a diameter equal to the diameter of the outer conductor contact. An insulated area is interposed axially between the outer conductor contact and the inner conductor contact, the insulated area having an electrically insulating material disposed at least partially around at least a portion of the extended section of the inner conductor. The distal end of the guidewire defines an antenna configured to detect MRI signals. The inner and outer conductors are configured to conduct the detected MRI signals to the proximal end of the guidewire.

Claim 25 recites an MRI compatible medical coaxial cable having opposing proximal and distal ends with the proximal end sized and shaped for insertion into a connector coupled to an MRI scanner. The coaxial cable includes an inner conductor extending at least a major length of the coaxial cable and an outer conductor coaxially disposed about the inner conductor such that the outer conductor has a larger diameter than a diameter of the inner conductor. The outer conductor extends at least a major length of the coaxial cable. The proximal end of the coaxial cable has an outer conductor contact coupled electrically to the outer conductor, the outer conductor contact having a diameter. An extended section of the inner conductor extends proximally beyond the outer conductor contact. The extended section of the inner conductor includes electrically conductive material disposed at least partially around a portion of the extended section of the inner conductor. An inner conductor contact is radially disposed over the electrically conductive material such that the inner conductor contact has a diameter equal to the diameter of the outer conductor contact. An insulated area is positioned to isolate electrically the outer conductive contact from the inner conductive contact. The insulated area including an electrically insulating material disposed at least partially around a portion of the extended section of the inner conductor. The coaxial cable is configured to conduct MRI signals from a distal end portion to the proximal end.

Claim 1 was rejected as being anticipated by McKinnon. Claim 25 was rejected as being obvious over McKinnon. McKinnon does not teach or suggest a guidewire having an inner

conductor coupled to an inner conductor contact and an outer conductor coupled to an outer conductor contact, wherein the diameter of the outer conductor is larger than the diameter of the inner conductor, and wherein the inner conductor contact and the outer conductor contact have equal diameters.

McKinnon discloses a medical appliance for use in MRI procedures, the appliance including a guidewire formed by a coaxial cable acting as an antenna in an MRI system (McKinnon, Abstract). Figures 2 and 3 of McKinnon are provided below.



Figures 2 and 3 of McKinnon are two embodiments of longitudinal portions of the appliance 9. As shown in Figure 2 and described in McKinnon, the appliance 9 is a guidewire including an open wire length antenna formed by a coaxial cable comprising a central conductor 13 and a shield conductor 15 disposed coaxially with the central conductor 13 (McKinnon, col. 4 lines 54-58; and Figure 2). McKinnon goes on to disclose that the “proximal end (not shown) of the coaxial cable is for connection to the standard antenna input...” (McKinnon, col. 4 lines 63-65).

Figure 3 similarly shows a central conductor 130 and a conductor coating 150 disposed coaxially with the central conductor 130 (McKinnon, col. 5 lines 1-4). McKinnon reiterates that the

“proximal end (not shown) of this coaxial cable is adapted to connection to the standard antenna input...” (McKinnon, col. 5 lines 7-10).

It is well known in the art of coaxial cables that the outer contact is disposed about the inner contact. Accordingly, McKinnon does not teach or suggest a guidewire having an inner conductor coupled to an inner conductor contact and an outer conductor coupled to an outer conductor contact, wherein the diameter of the outer conductor is larger than the diameter of the inner conductor, and wherein the inner conductor contact and the outer conductor contact have equal diameters, as recited in claims 1 and 25.

Pending claim 47 (now cancelled) recited that the inner conductive contact has approximately the same diameter as the outer conductor contact. This subject matter is now incorporated into claims 1 and 25. The Office Action asserts that, with respect to claim 47, “McKinnon discloses that contacts having approximately the same diameter (see Figs. 2 and 3)” (Office Action, page 3). Contrary to the assertions in the Office Action, Figs 2 and 3 of McKinnon do not show the contacts. As explained above, McKinnon teaches that the proximal end of the coaxial cable is adapted to connection to a standard antenna input. It is well known in the art of coaxial cables that the outer contact is disposed about the inner contact. Thus, the inner contact and the outer contact cannot have the same diameter.

The Office Action asserts “[w]ith respect to the inner and outer conductor contacts, the Examiner interprets the surface of the inner and outer conductor to be the contact as any conductive material touching the surface of the conductor would be electrically coupled to the conductor” (Office Action, page 2). Figures 2 and 3 of McKinnon show central conductors 13, 130 and shield conductors 15, 150 extending coaxially such that the shield conductors 15, 150 are disposed around the central conductors 13, 130, respectively. Thus, even in light of the assertion by the Office Action of the conductors themselves being contacts, McKinnon still teaches two elements with different diameters. Accordingly, McKinnon does not teach or suggest a guidewire having an inner conductor coupled to an inner conductor contact and an outer conductor coupled to an outer

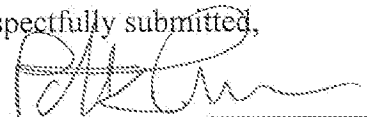
conductor contact, wherein the diameter of the outer conductor is larger than the diameter of the inner conductor, and wherein the inner conductor contact and the outer conductor contact have equal diameters, as recited in claims 1 and 25.

Accordingly, McKinnon does not teach or suggest all of the elements of claims 1 and 25. The additional cited references fail to cure the deficiencies of McKinnon. For at least these reasons claims 1 and 25, as well as claims 2-17, 20, 22, 24, 27, 28, 31, 32, 34-36, 38, 45, 46, 49-53 which depend therefrom, are patentable over the cited references. The Applicants respectfully request withdrawal of the rejections of these claims.

In view of the above, each of the presently pending claims in this application is believed to be in immediate condition for allowance. Accordingly, the Examiner is respectfully requested to pass this application to issue. If the Examiner has any questions or concerns, the Applicants encourage the Examiner to contact the Applicants' representative, Patrick Turner, by telephone to discuss the matter.

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Respectfully submitted,

By 

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